

Advancing Sustainable Production with the Ecological Footprint

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Copenhagen Workshop - Solstice, 2007



Global Footprint Network
Advancing the Science of Sustainability

VISIT...

LANZAROTE
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The
Economist



Cleaning up

A special report on
business and climate change
June 2nd 2007

Yes, Footprint is becoming more popular...

...and it provides a measurement method to compare **human demand** against **biosphere's regenerative capacity**

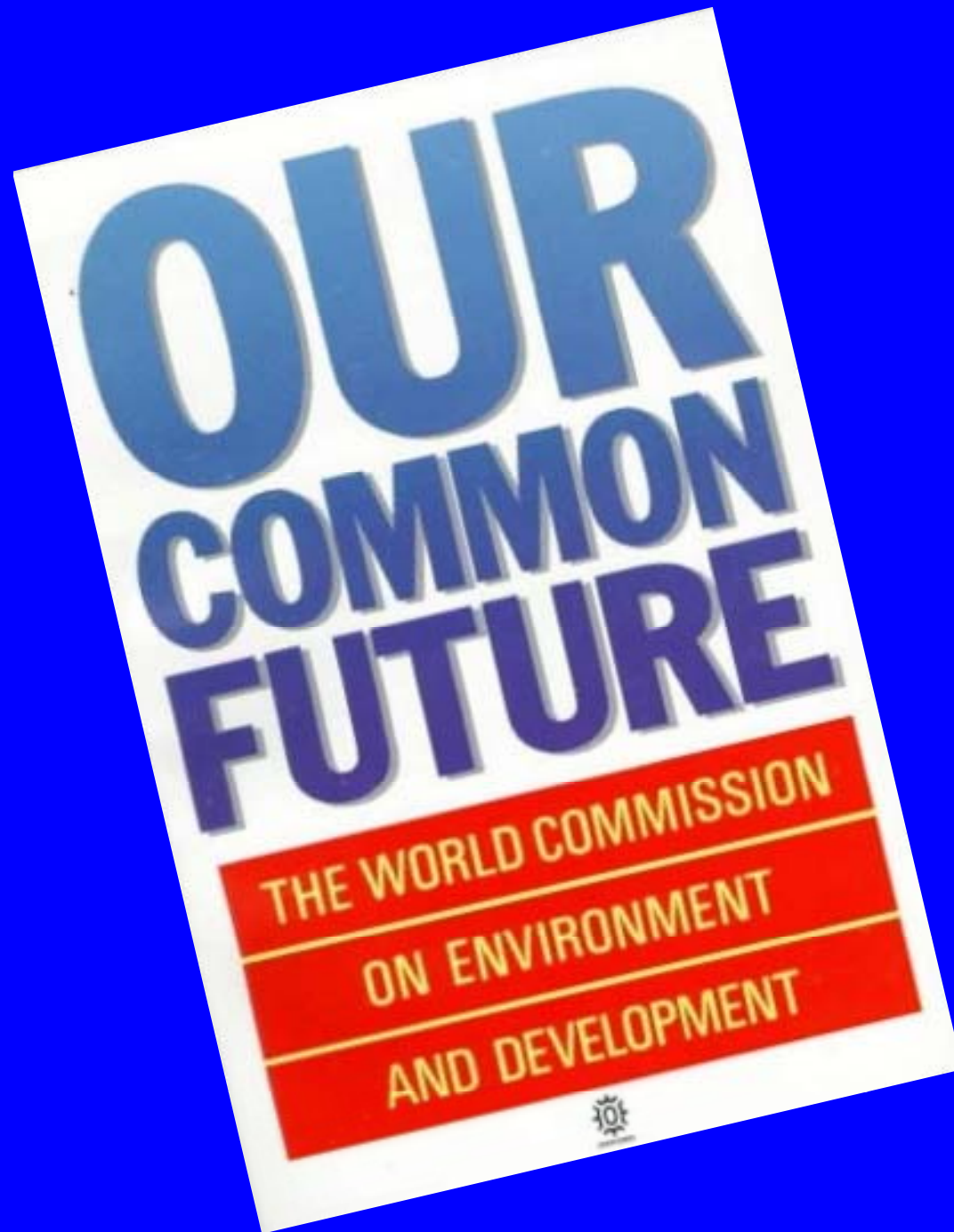


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Footprint Benefits:

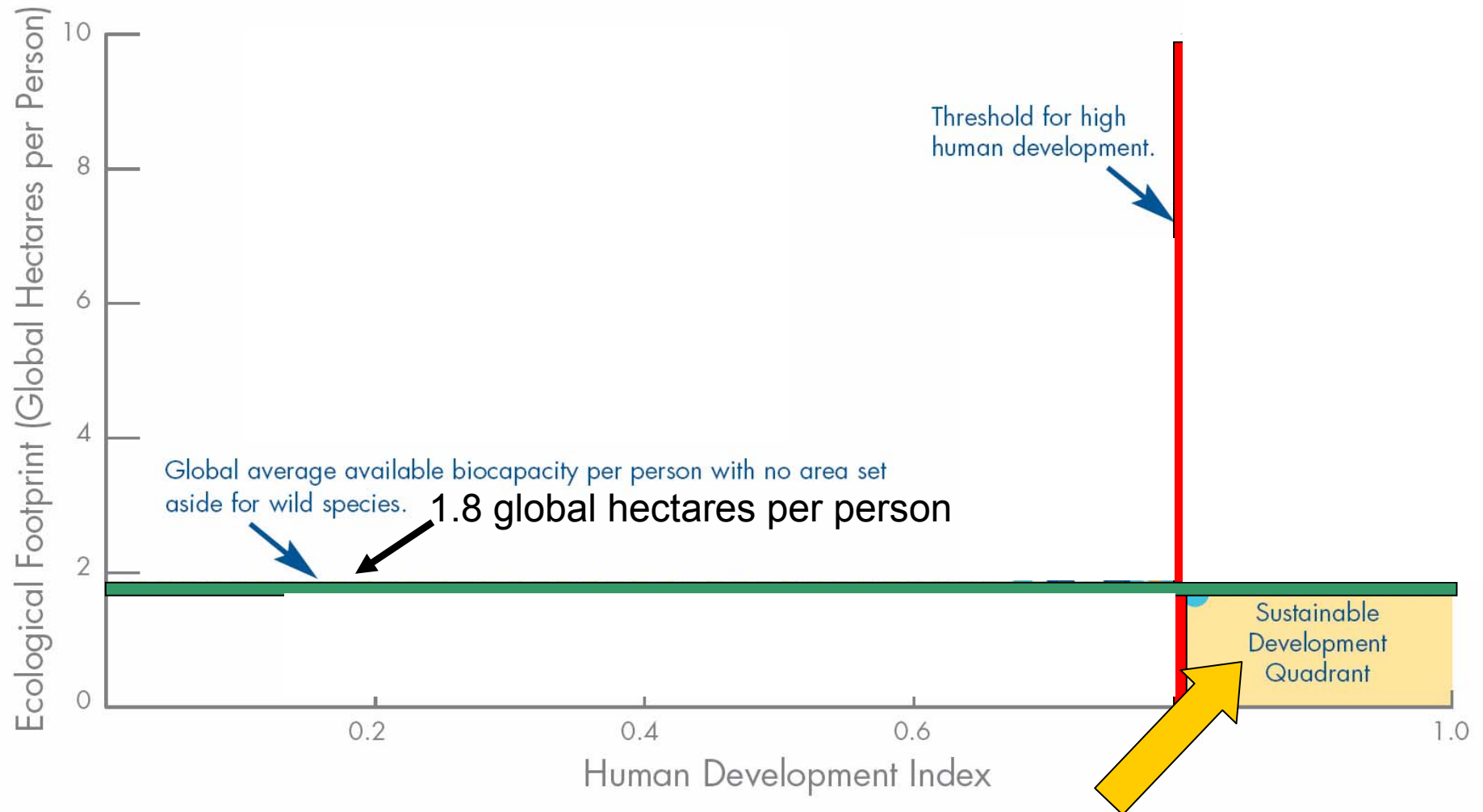
- You can **explain the challenge**: a complex, ecologically constrained world
- You can **communicate benefits** of sustainable manufacturing
- You can **identify risks, new markets, and opportunities** for sustainable manufacturing

“Brundtland Report” (1987)

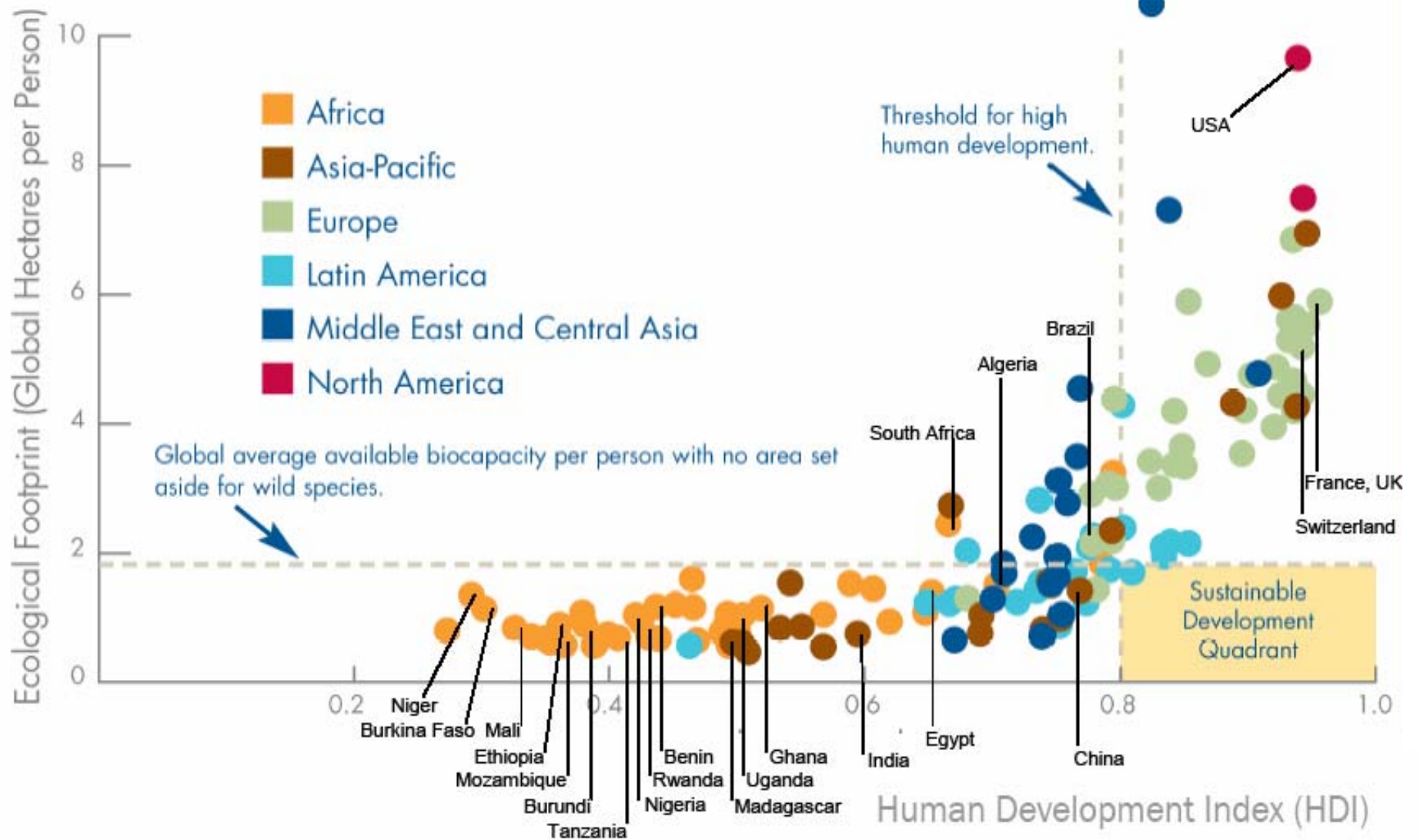


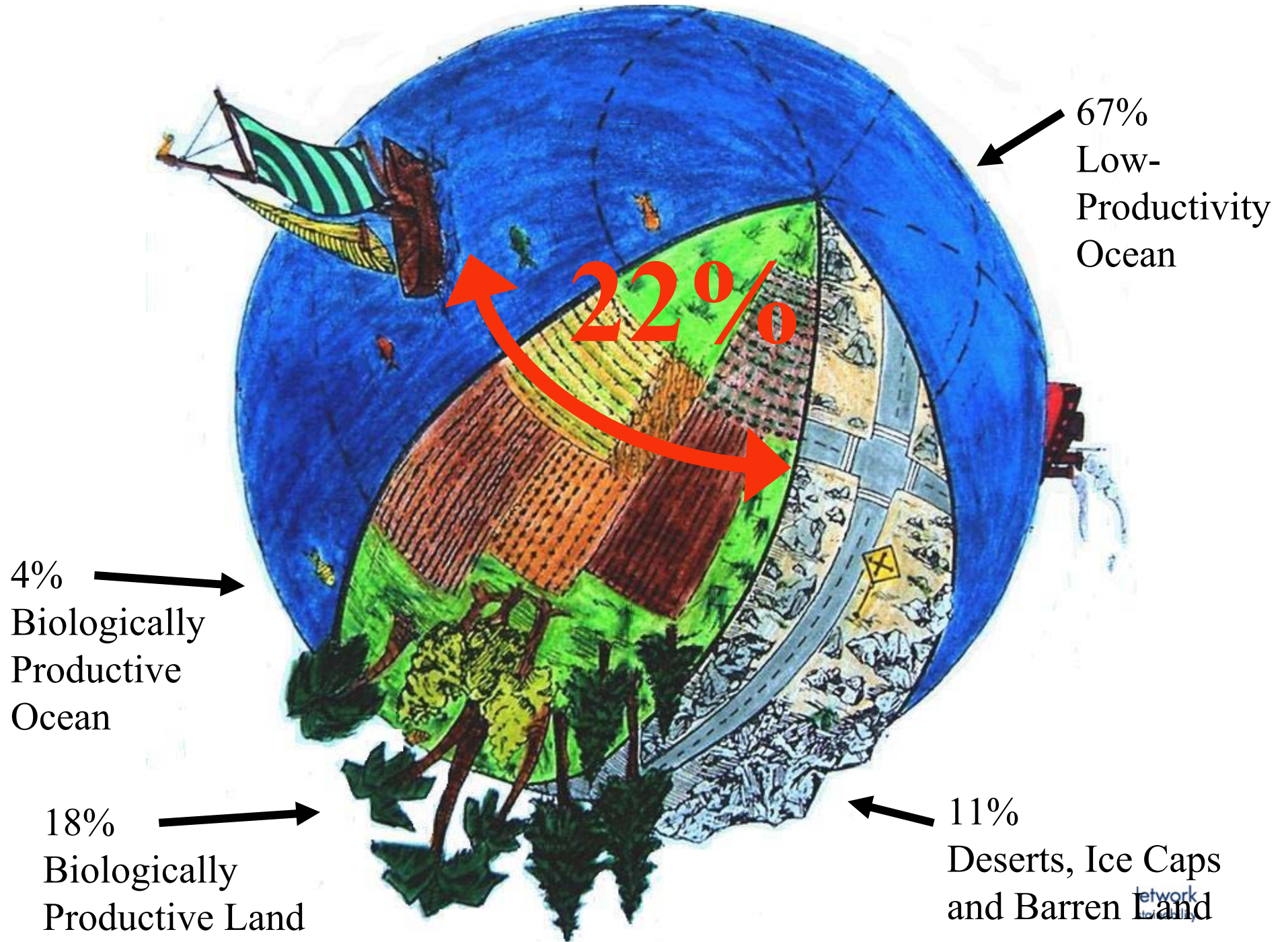
SUSTAINABLE DEVELOPMENT: WHERE ARE WE TODAY?

Human Development Index and Ecological Footprint of Nations

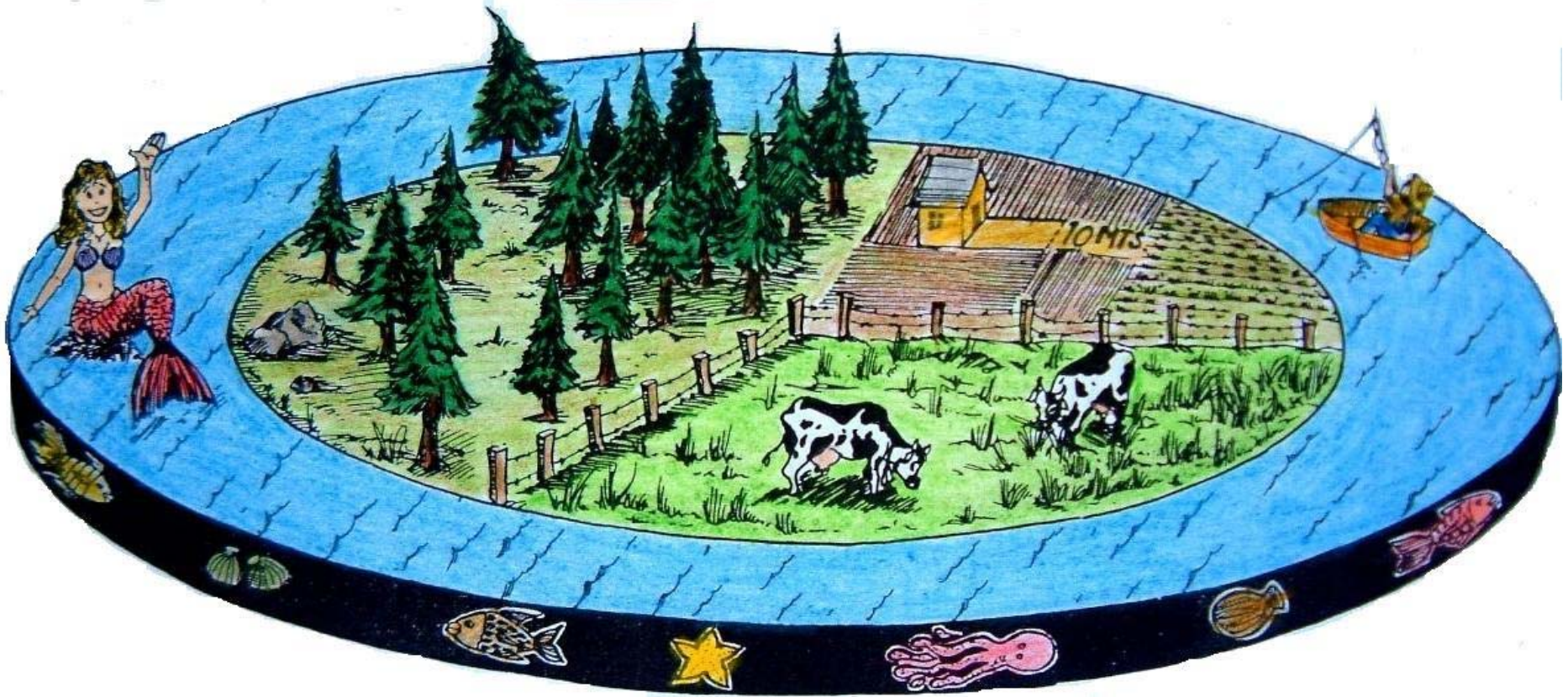


Produced for the Swiss Government (SDC, ARE, Statistics)



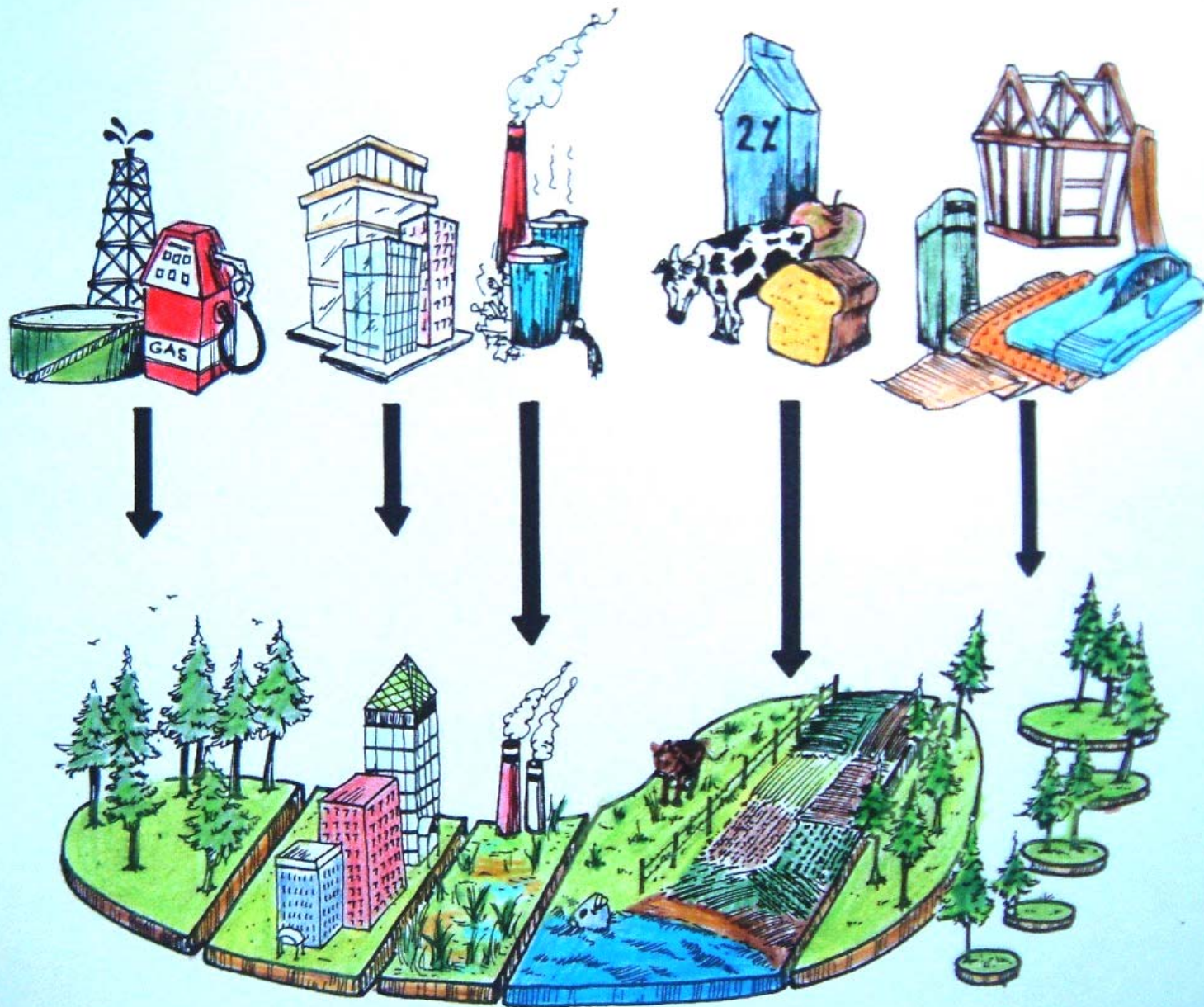


How much “nature” is available?



With 6.3 billion people (2003)
Current global average availability of
bioproductive land + sea area

= 1.8 global hectares/person



Fossil Fuel Built-up Waste
absorption Food

Fibres

What Does the **Footprint** Measure?

- ***Footprint***: How much of the biosphere's regenerative capacity is used by human activities?
- ***Biocapacity***: How much of the biosphere is available within a region?

Global Ecological Balance Sheet

(in global hectares/person, 2003 data)

Human Demand (*Ecological Footprint*)

Footprint Areas for:

Growing Crops	0.49
Grazing Animals	0.14
Settlements & infrastructure	0.08
Producing timber & fuelwood	0.23
Absorbing excess CO ₂	1.14
Harvesting Fish	0.15

Total Global Demand 2.2

Demand
Exceeds
Supply
By
25%



Ecological Supply (*Biocapacity*)

Biocapacity Areas:

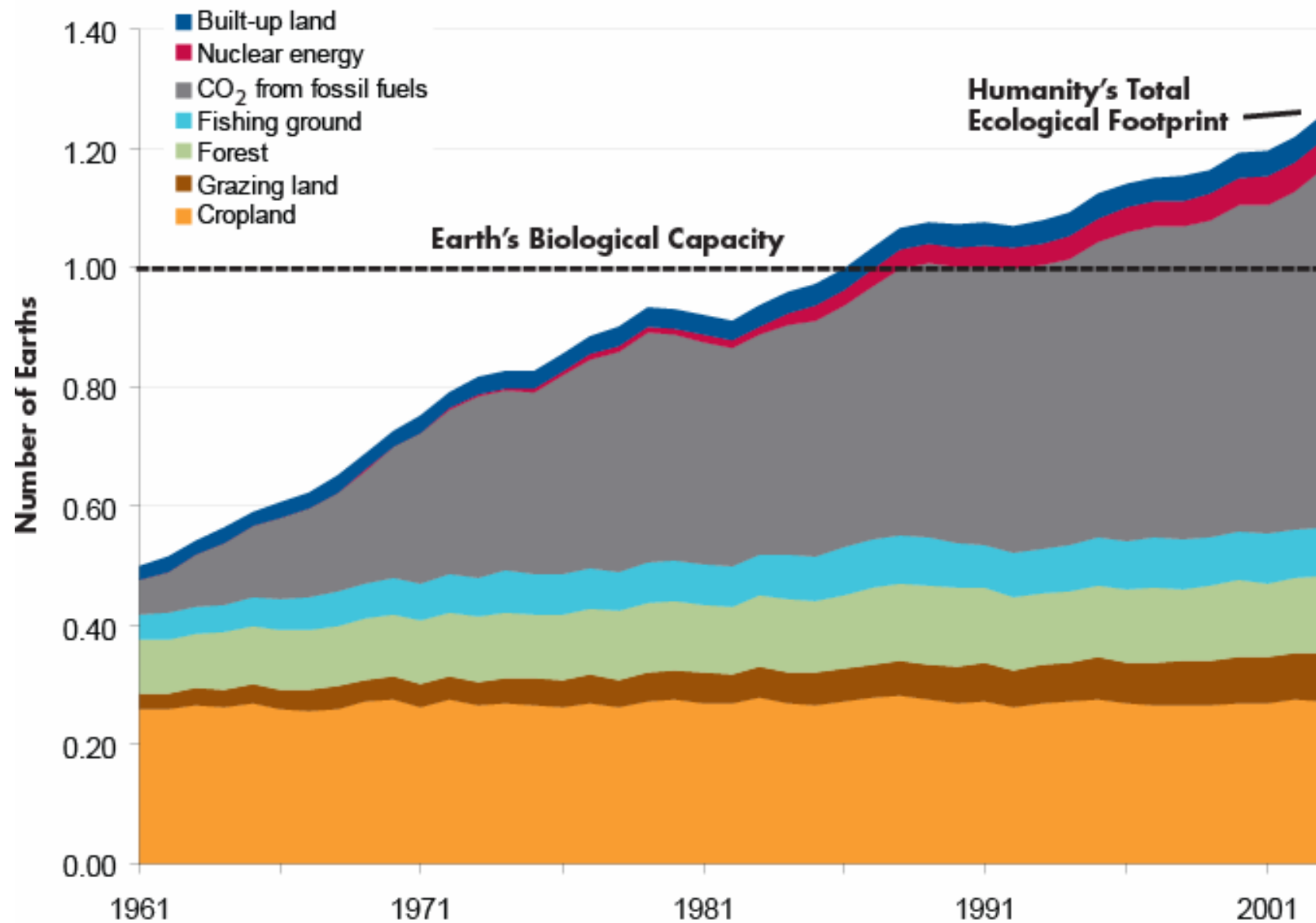
Crop land	0.53
Grazing land	0.27
Built-up area	0.08
Forest	0.78
Fishing Grounds	0.14

Total Global Supply 1.8

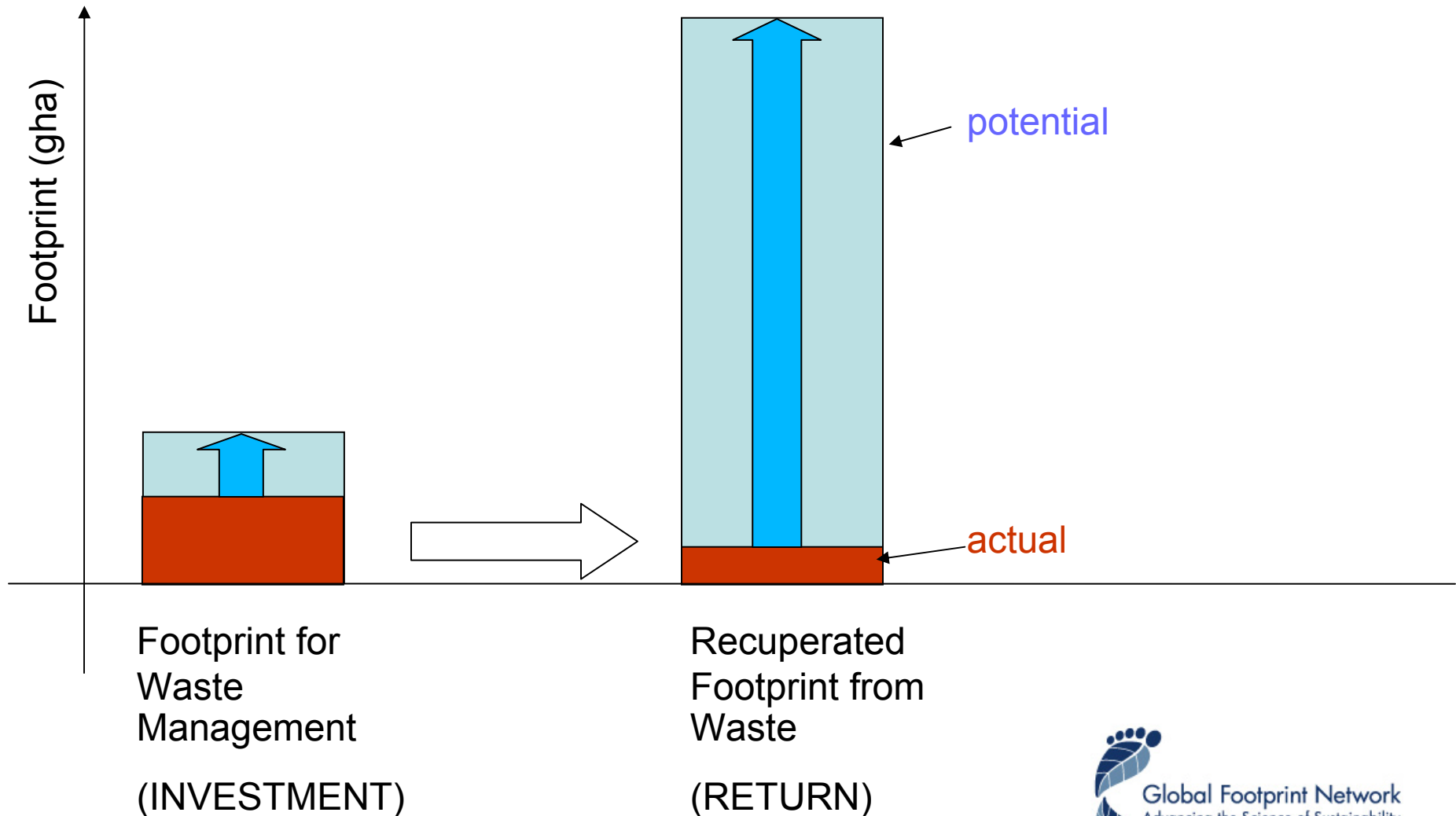


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Humanity's Ecological Footprint



Bigger Footprint for Solution Providers E.g.: Waste Management as Investment

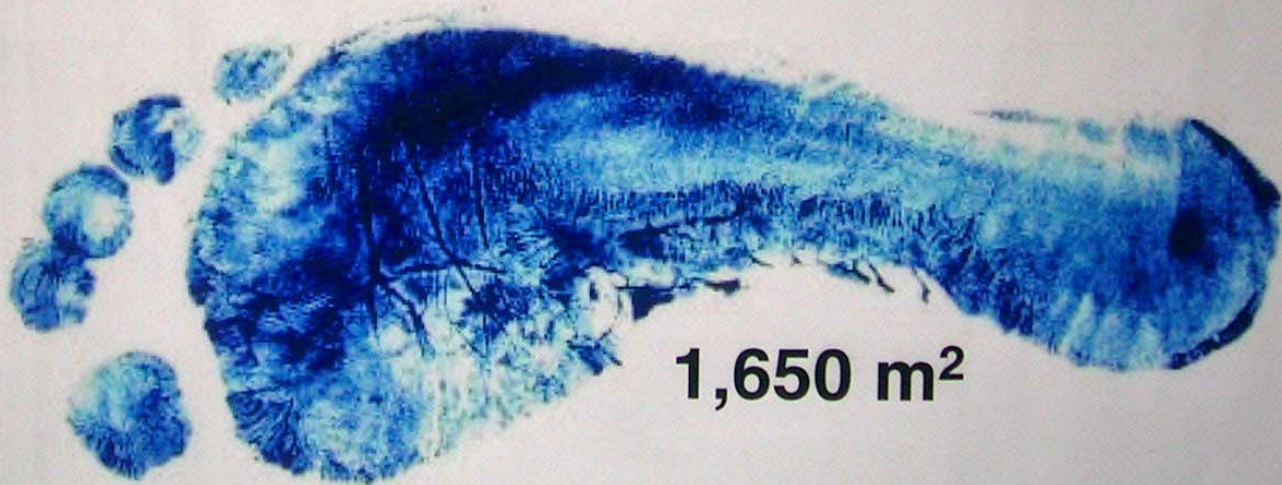
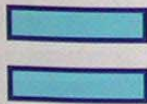


Building Momentum: The Footprint of an Australian General Retailer

Business As Usual - General Retailer per 1m² NLA

Annual Resource Inputs		Example Environmental Reporting	per \$1,000 GTO	per FTE
Electricity consumption (kWh/m ²)		Electricity consumption (kWh)	40.70	17,484
Light	160	Greenhouse from energy (kg CO ₂ -e)	38.67	16,610
Power	107	Water Consumption (litres)	10.62	4,563
HVAC (selling area only)	95	Waste (kg)		
Greenhouse from energy (kg CO ₂ -e/m ²)	321	Landfilled	2.59	1,113
Water Consumption (litres/m ²)	88	Recycled	0.39	166
Waste (kg/m ²)				
Landfilled	21.5			
Recycled	3.2			
Travel to work		Notes		
Private car	82%	Average gross turnover (GTO) data used		
Public transport	13%	Assumed 4 equivalent full time employees (FTE) for 200m ² store		
Walk / other	5%			

1 m²



1,650 m²



One Planet Business

Creating Value Within Planetary Limits

2007 FIRST EDITION

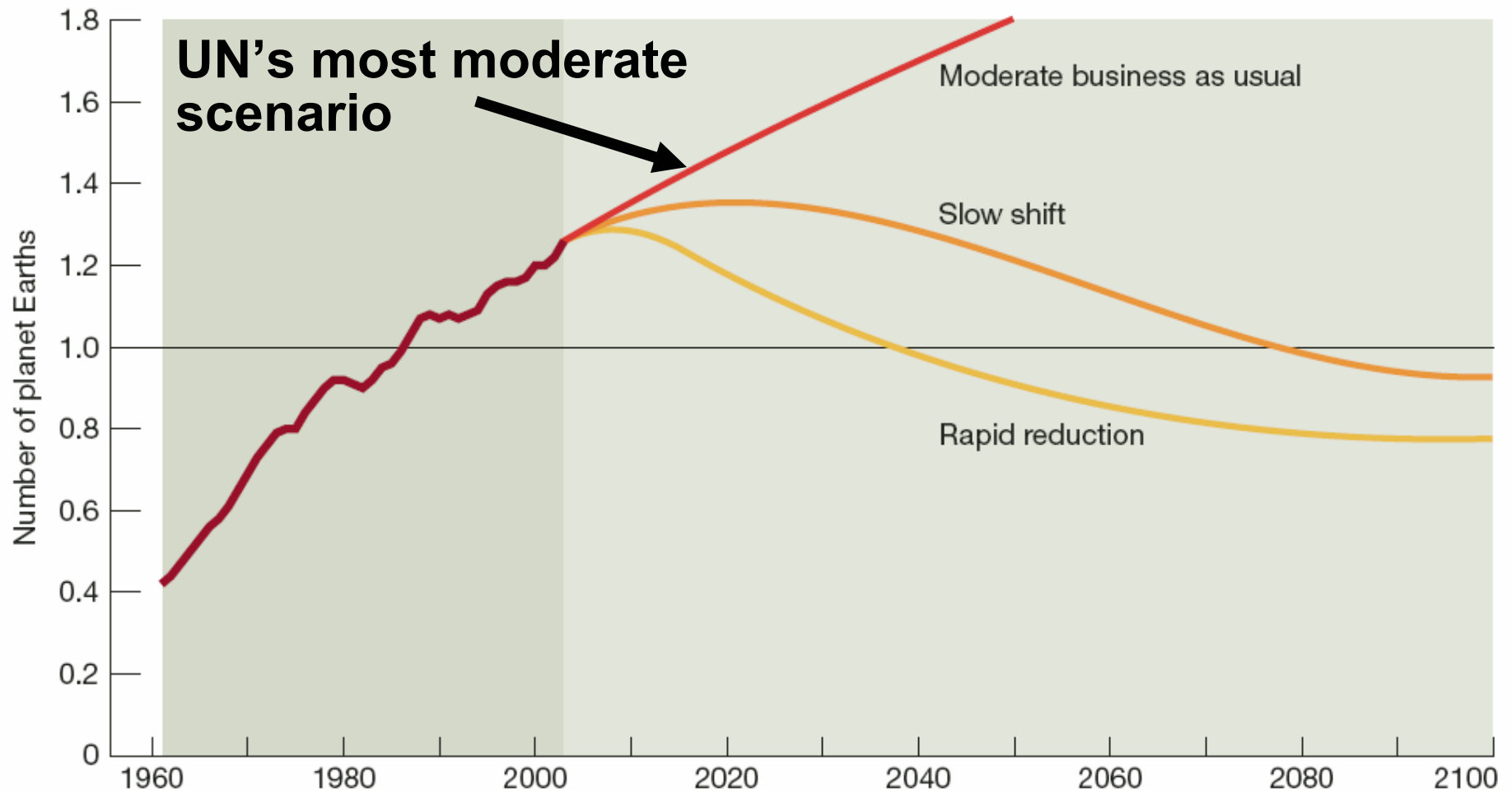


Looking into the Future

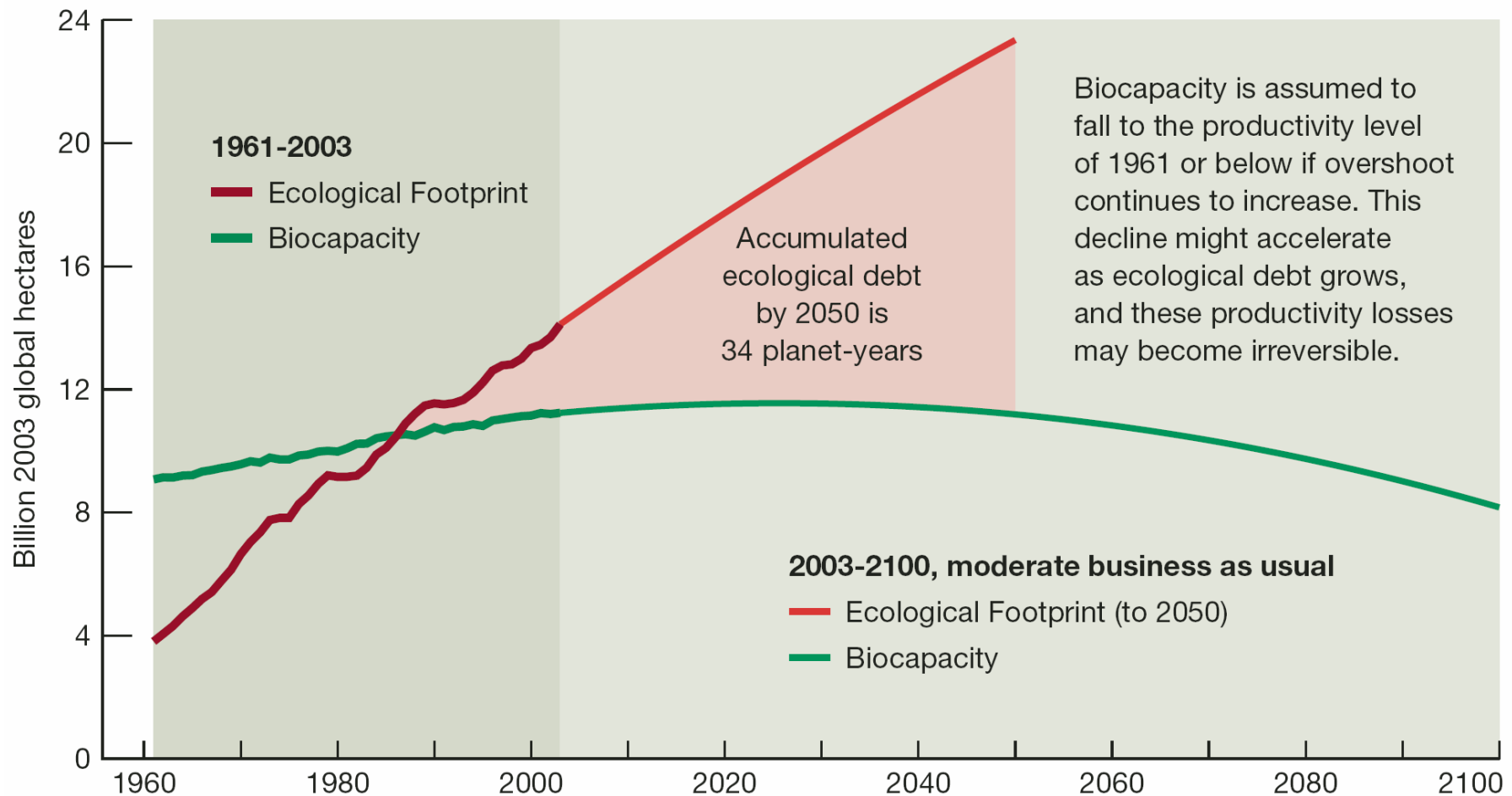


Context for the Future of Business:

How many % of World GDP need to be invested to turn the curve?

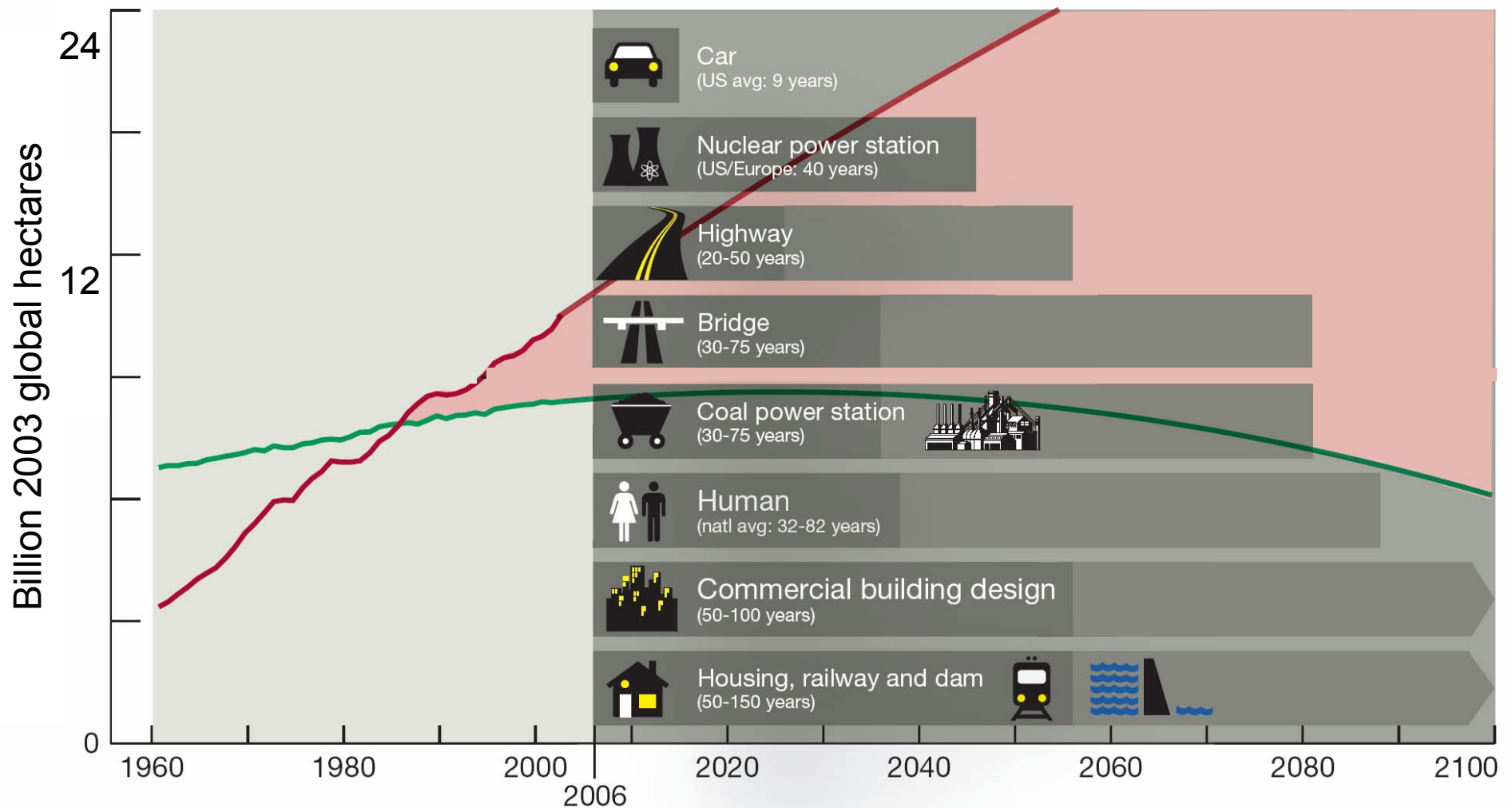


Is there enough natural capital to liquidate for a Moderate Business-as-Usual Path?



Which Investments Will Win?

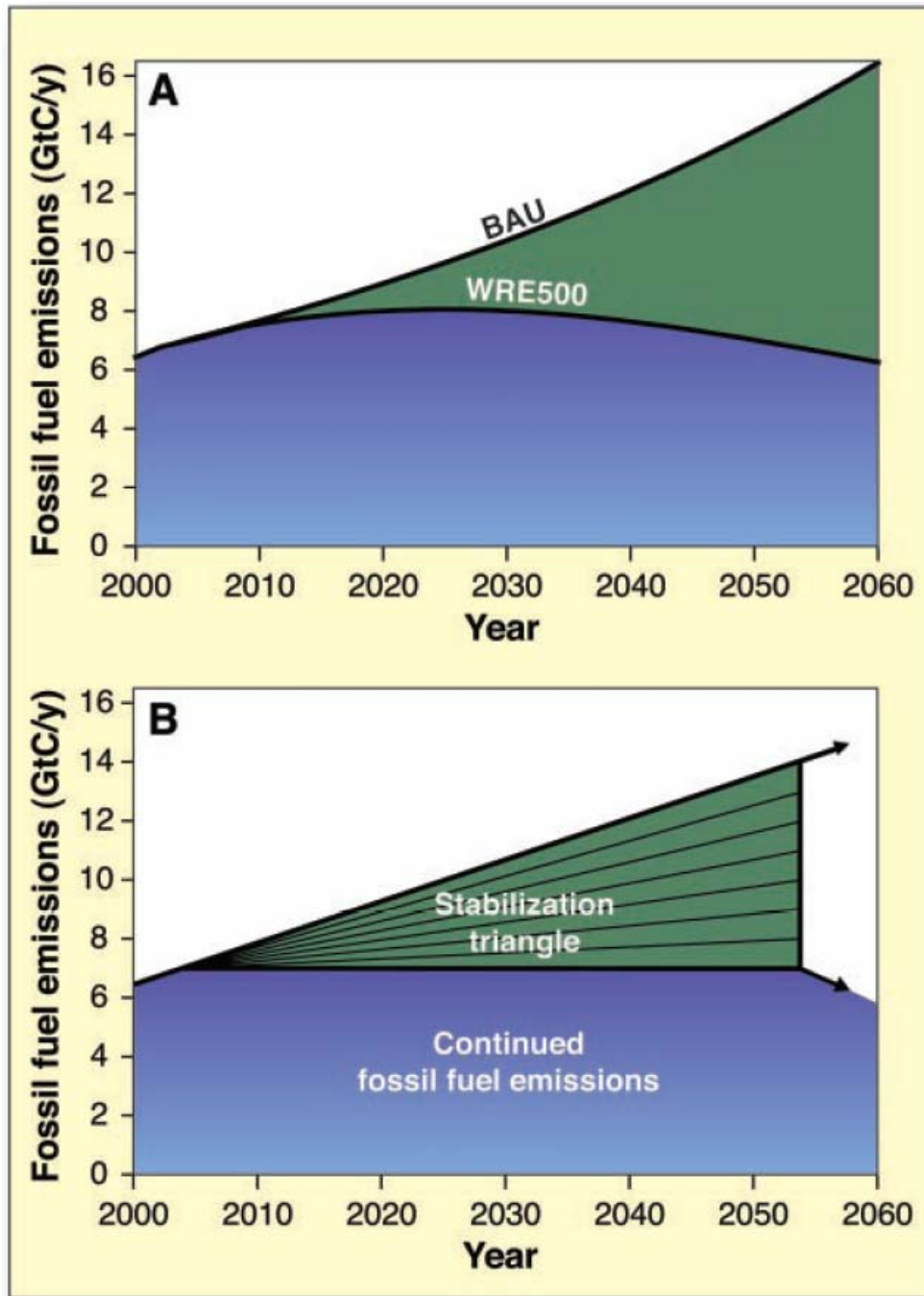
Maps Opportunities and Liabilities to Lifespan of People, Assets and Infrastructure



Where are the new markets?

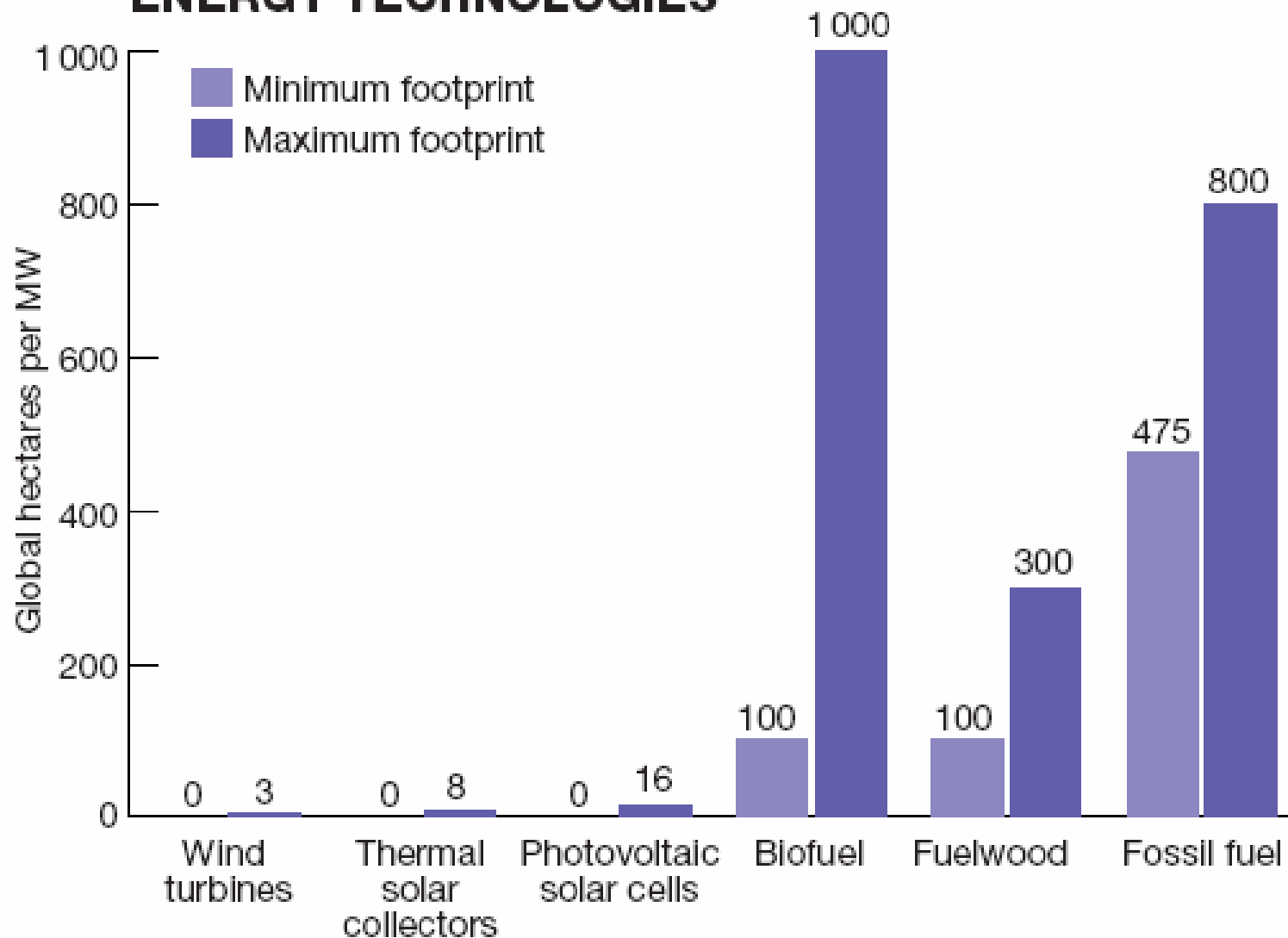
Opportunities beyond Carbon Footprint: **Sustainability Wedges**

- Biomass Energy
- Infrastructure
- Reproductive Health
- Female Economy
- Agriculture and Food
- Resource Efficiency
- Waste Management



Source: Pacala & Socolow (*Science*, 2005)

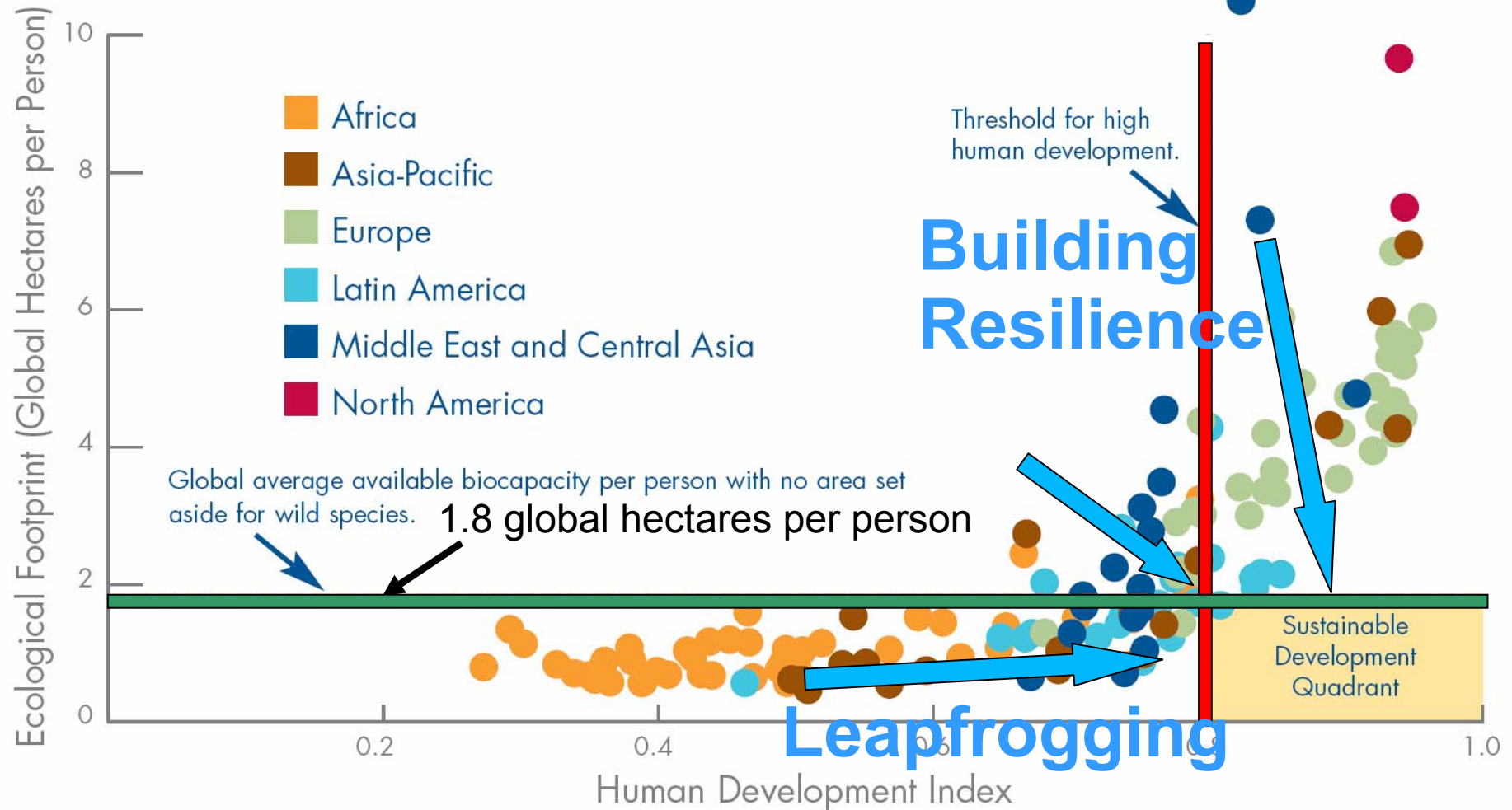
COMPARING THE FOOTPRINTS OF ENERGY TECHNOLOGIES



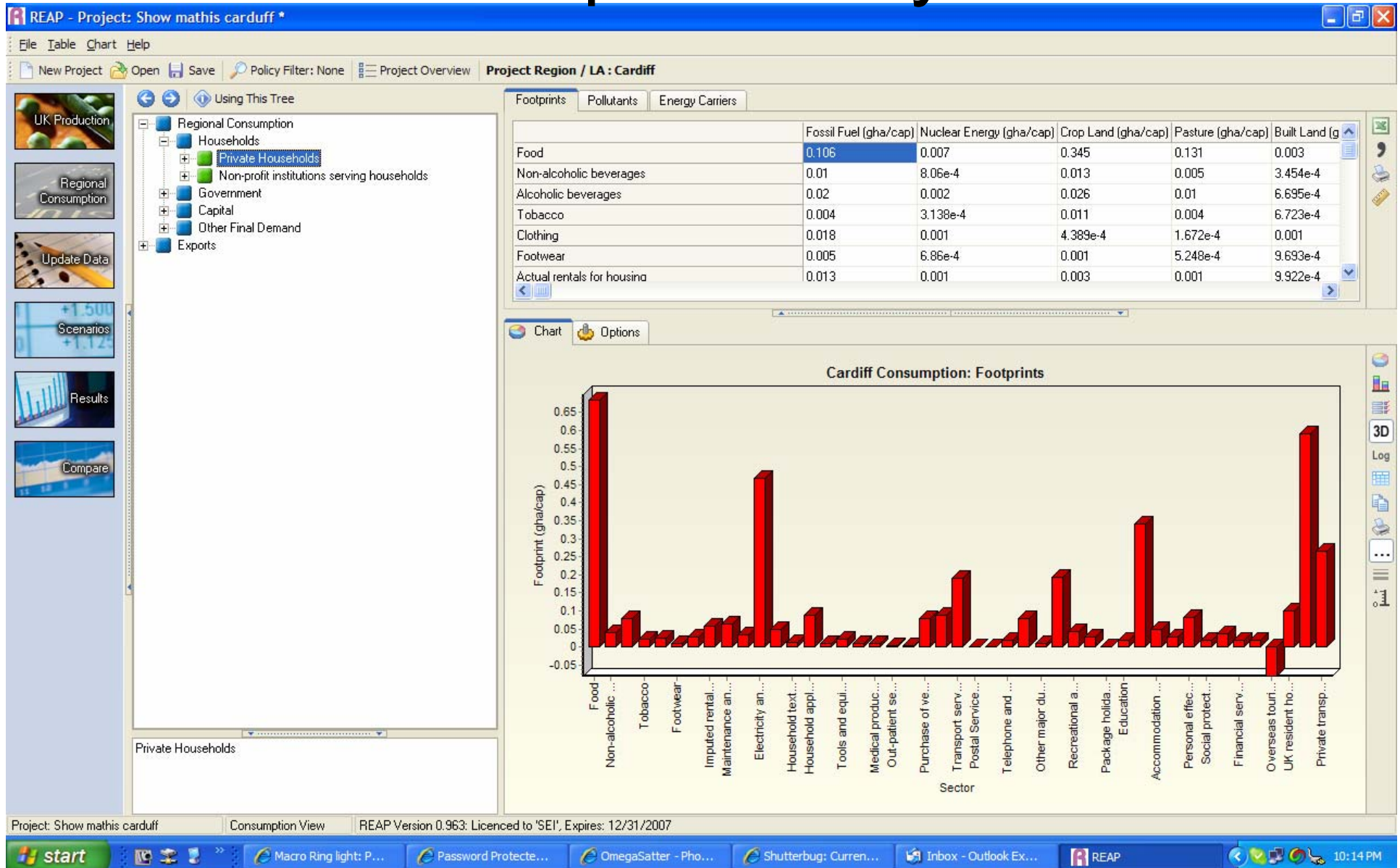
Which Investments are Effective?

$\Delta \text{HDI} / \text{€}$ and $\Delta \text{overshoot} / \text{€}$

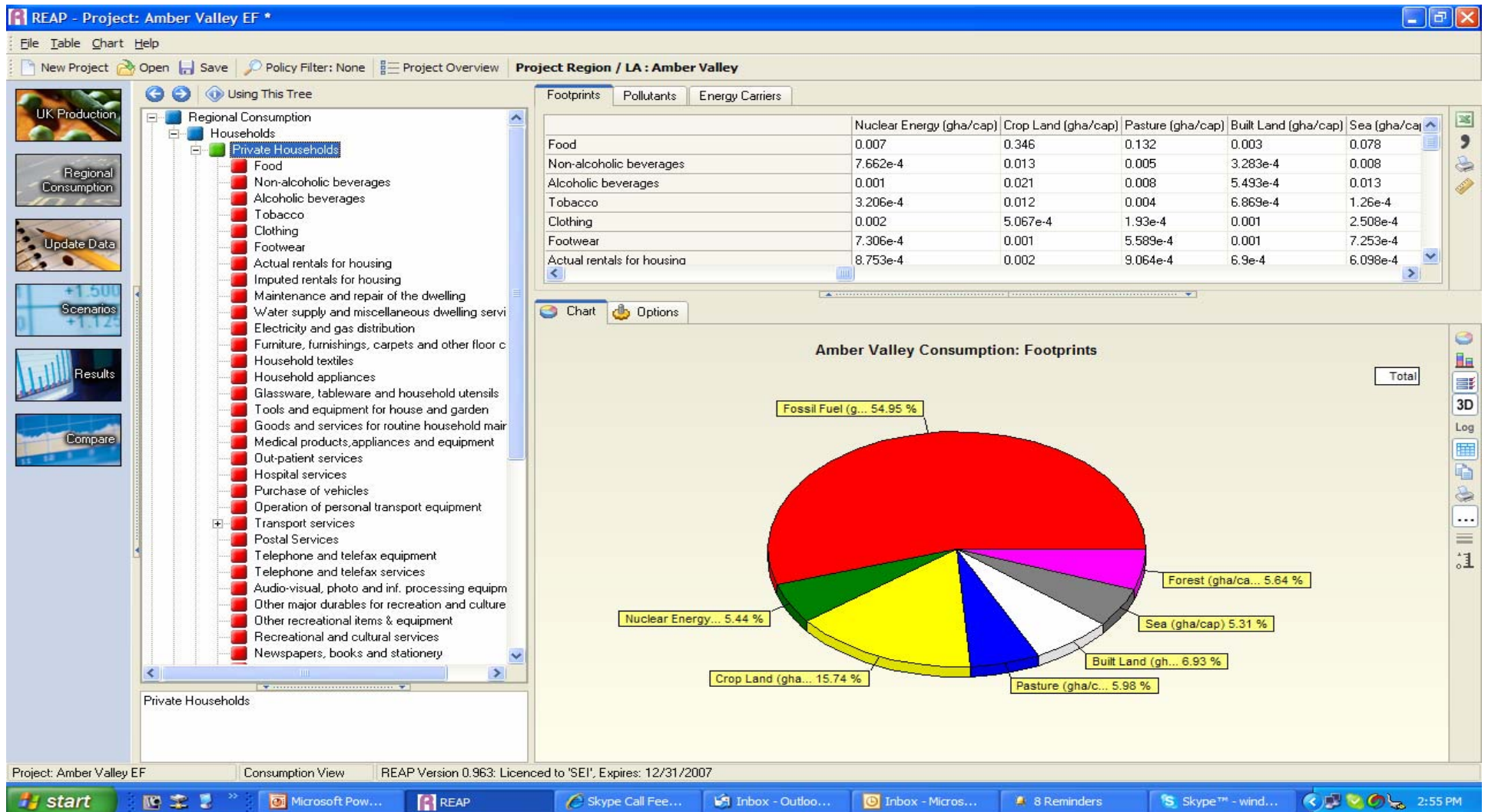
Human Development Index and Ecological Footprint of Nations



Example 1: REAP—Input-Output Based Footprint Analysis Tool

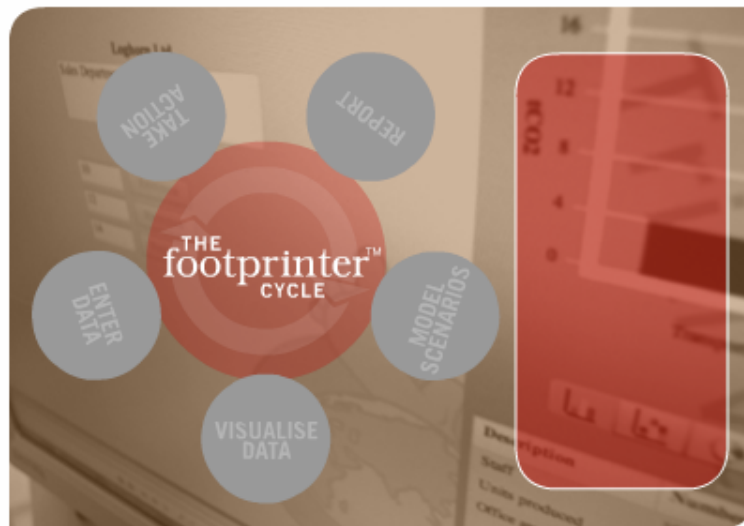


Average Footprint (and components) for each UK Municipality





More than just a calculator



Footprinter™ is a next generation carbon accounting tool that enables the user to better manage and monitor their organisation's ecological and carbon footprint. With Footprinter™ you can easily measure your environmental impact, model different "what if" scenarios and generate easy to read graphical reports and charts. These can be readily incorporated into annual reports, web sites and other communications.

You can access a free trial version of Footprinter™ now by registering

Footprinter™ is:

- Flexible and feature-rich - yet quick and easy to use [How it works](#)
- Compatible with emerging [National and International standards](#)
- Comprehensive conversion factors for Transport, Utilities, Food, Materials and Products
- Created by Queen's Award-winning footprinting experts [Best Foot Forward](#)



Company

Transport

Utilities

Food

Materials

Types

Details



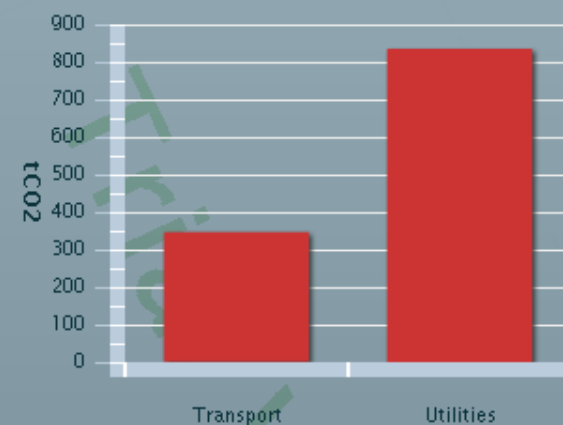
Name	Option	Consumption	Note	tCO ₂
Grid electricity - Briti	Grid electricity - Briti	865653 kWh		306.44
Grid electricity - Goc	Grid electricity - Goc	1470377 kWh		0.00
LPG (therms)	LPG (therms)	1.0003 therm	approximate only	0.01
Gas Oil (litres)	Gas Oil (litres)	129457 litres	shipped from Abu D	348.24
Natural gas (kWh)	Natural gas (kWh)	944379 kWh	note 3	179.43
Renewables	Renewables	5000 kWh		0.00
Natural gas (kWh) 1	Natural gas (kWh)	2343 kWh		0.45

Total: 834.56 tonnes

Remove

Footprinter

Summary :: Current



Total: 1180.15 tonnes

CO₂ EF

Description	Number	tCO ₂
Staff	45	26.23/person
Units produced	435	2.71/unit
Office area	40	29.50/sqm



powered by

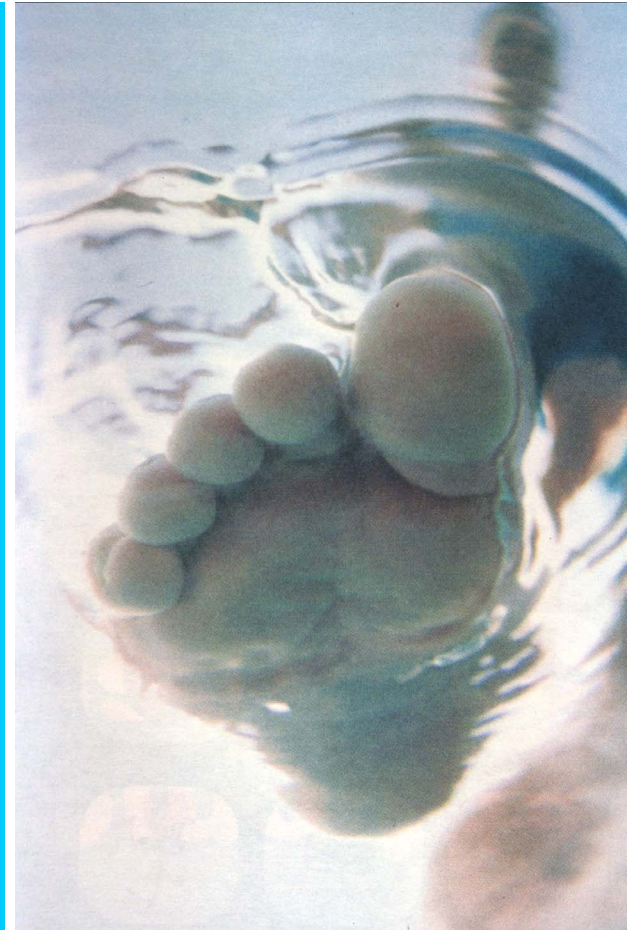
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INVITATION!

- Check out the wallet card
- Test-run the Footprint?
- Newsletter?

www.footprintnetwork.org

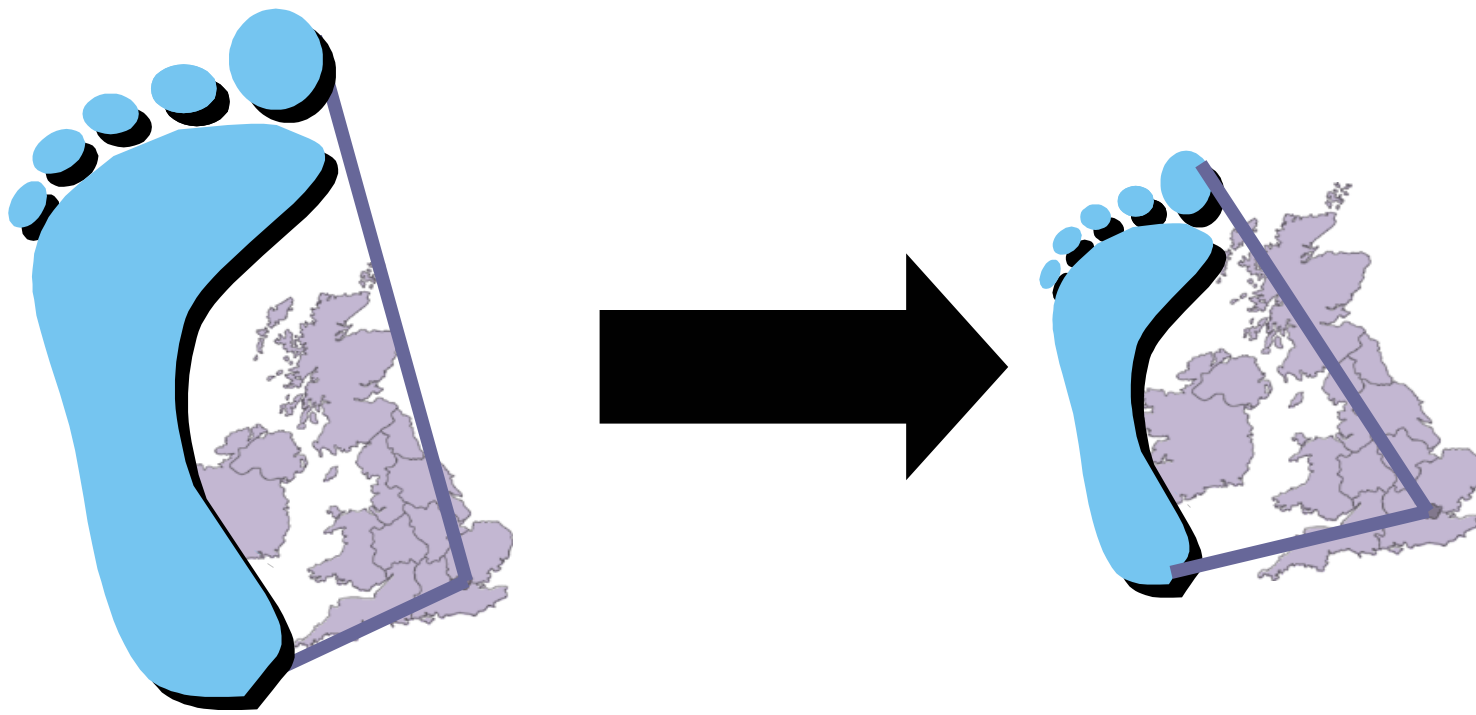
mathis@footprintnetwork.org



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“London First”: What is the potential for reduction? Which technologies would be needed?

- Total London Ecological Footprint = 50 million gha
- Possible to reduce London’s Ecological Footprint by between 20 & 25 million global average hectares (gha)



London Remade with WSP Environmental, Global Footprint Network

The Ecological Footprint

MEASURES

how fast we consume resources and generate waste



Energy



Settlement



Timber & paper



Food & fibre



Seafood

COMPARED TO
how fast nature can absorb our waste and generate new resources.



Carbon Footprint

Built-up land



Forest

Cropland & pasture



Fisheries